P.I.A. Guidelines & Checklist

The Private Improvements Agreement process was established to address right-of-way improvements resulting from private developments. However, not all developments are required to go through the PIA process. In general, "significant" improvements in the public right-of-way require a PIA; this ensures that the City has a record of such improvements for future reference and use. The following list provides some guidelines to assist in determining if a PIA is warranted for a given development. Please note that this list is not all-inclusive:

PIA's are typically required for: (Plan and Profile sheet(s) required)

- ✧ Rezoning conditions: Some rezoning conditions may require a PIA for offsite improvements.
- ✧ Curbing: If the extent of curbing will result in impacts to existing drainage patterns.
- ✧ Drainage Structures: Box Culverts, Pipe Culvert, connections to existing drainage facilities.
- ✧ Drainage Improvements: Drainage grading.
- ✧ Paving: This includes acceleration lanes, deceleration lanes, and turn lanes.
- ✧ Median modifications: all median modifications.
- ✧ Traffic Devices: This includes signalization, new traffic signs, ..etc.
- ✧ Sidewalks along MS&R roadways.

PIA's are not typically required for: (Plan sheet(s) required)

- ❍ Curb cuts / Driveways
- ❍ Utility trenching and backfill
- ❍ Sidewalks on non-MS&R roadways
- ❍ Minor curb replacements
- ❍ Curb cut closures

If there is a question as to whether or not a PIA is required, consult with the Permits and Codes Unit of the TDOT Engineering Division at 791-5100 or can be visited at 201 N. Stone Ave., 4th Floor. See Office Procedure No. 8-1552-002, Drafting Standards for the preparation of Project Plans.

PRIVATE IMPROVEMENT FEES

Applications for Private Improvement Agreements shall pay a fee of five (5) percent of the estimated cost of the improvement as certified by the engineer of record for the applicant provided that the estimated cost is accepted and approved by the DSD. The fee for a Private Improvement Agreement shall be paid prior to final approval of the agreement by the City. *D.S. 1-05.6.0*

The construction inspection fee is based on total project construction costs to install all proposed improvements in the public R/W excluding the wet and dry utilities.

A detailed itemized cost estimate of proposed improvements in the public R/W must be submitted prior to issuance of an excavation permit. The cost estimate shall include costs of materials, labor, and include all other related costs including all applicable taxes. The cost estimate must itemize each bid item including item description, item quantity, unit item cost and calculated item costs, and a grand total of all item costs.

The following is a list of items typically included in PIA projects, however this is not an all-inclusive list. Improvements vary from project to project to project.

- Drainage structures: Box Culverts, Scuppers, Storm Drain, Storm Drain Manholes, Catch Basin, Valley Gutters, and Bank Protection (Public Drainage)
- Grading in R/W (subgrade preparation)
- Aggregate Base Course
- Asphaltic Concrete
- Asphalt Surface Treatments
- Pavement Patches
- Sidewalk (along common areas)
- Multi Use Pedestrian Paths including DG paths
- Survey monuments
- Valve Box and Manhole Adjustments (including sewer manholes)
- Curb and Headers
- Curb Access Ramps
- Guard Railing
- Barricade Railing
- Post Barricades
- Median Island Modifications (including landscaping)
- Street Signs
- Striping
- Light Poles
- Traffic Signals
- Landscaping (public)

P.I.A. Plan Checklist

The following will be required for first time submittal:

- ❑ A copy of the **approved** documentation: Drainage Report, Geotechnical Report, DSMR, Rezoning, Tentative Plat, Development Plan, P.A.D., WASH Ordinance, and ERZ approvals as applicable.

- ❑ A Geotechnical Report is required for submittals and must include pavement section and reference soil recommendation for public roads.

The following items shall be included on Cover sheet:

- ❑ Administrative address.

- ❑ Engineering firm's logo

- ❑ Developer and owner's name

- ❑ Recordation information of Maps and Plats, Book and Page must be noted on cover sheet of subdivision street improvement plans. Plat must be recorded before submittal of mylars for final review and approval.

- ❑ Basis of Elevation information must refer COT field Book and Page.

Required Paving Notes (as applicable):

- ❑ All construction activity and test methods shall be in conformance with Pima County/City of Tucson Standard Specifications for Public Improvements (PC/COT SSPI) 2003 Edition.

- ❑ Basis of Elevation information must refer COT field Book and Page.

- ❑ Plans should call out a specific asphalt pavement mix or as follows:

- ❑ Aggregate Base Course shall conform to PC/COT SSPI Section 303

- ❑ Asphaltic Concrete shall conform to PC/COT SSPI Section 406. (Indicate Mix Type)

- ❑ All concrete shall conform to PC/COT SSPI Section 1006, Class S, 3,000 PSI compressive strength at 28 days, unless otherwise specified.

- ❑ Pavement Section Design documentation, are in accordance to the approved Geotechnical Report, **Report Name and Firm Name, Project Number.**

- ❑ All Drainage Infrastructures, indicated on the plans, are in accordance to the approved Drainage Report approved by Development Services Department.

- ❑ All changes to these plans must be cleared by the City of Tucson City Engineer's Permits and Codes Section, prior to construction.

- ❑ The City shall not be held liable for any errors and/or omissions on these plans. Items not meeting City Standards shall be repaired/replaced at no cost to the City.

- The Engineer of Record shall submit to the City for acceptance any changes to the approved plans prior to construction. Additionally, the Engineer of Record shall certify all changes meeting all applicable standards, codes, and ordinances.

- A Soils Engineer shall conduct Quality Control material and inspection testing in accordance to City Standards and Specifications at no cost to the City.

- An excavation permit shall be obtained from the City of Tucson Transportation Department prior to any work within the Public right-of-way.

- A pre-construction field meeting shall be conducted with the City of Tucson Transportation inspector prior to any work within the public right-of-way.

- The extent and type of surface treatments/repairs indicated on the plans may not be all inclusive of the work that is needed. Additional repairs, paving, or replacement may be needed depending on field conditions.

- The contractor shall contact and/or coordinate any work with COT Streets & Traffic Maintenance Division, Median Island Maintenance Section (791-5279, ext. 234) prior to disturbing any COT/DOT landscaping or irrigation systems. Additionally, the contractor shall repair or replace any disturbed COT/DOT landscaping or irrigation systems, including replacement of any damaged plants. Contact Gary Wittwer @ 400-2645 for inspection and permits for landscaping. For irrigation removal/replacement contact Paul Rosenboom @ 237-7386.

- The PIA Inspector shall verify that the “saw cut” line is located within competent pavement. Adjustments to the plan shall be documented and As-built; a one foot minimum shall be provided.”

- Contractor shall obtain all permits required by governmental agencies.

- A copy of the approved plan shall be kept in an easily accessible location on the site at all times during construction.

- Signage and striping should be coordinated with Traffic Engineering and installed at no expense to the public. Call Traffic Engineering at 791-4259 prior to the installation or removal of striping and signage.

- Upon commencement of work, traffic control devices shall be posted and maintained by the contractor until such time as the work is completed. All warning signs barricades etc. shall be in accordance with the manual on uniform traffic control devices adopted by the State of Arizona pursuant to A.R.S. 28-065. Contact Traffic Engineering, 791-4259, 48-hours prior to placing or removing any said traffic control devices.

- Contractor shall call Blue Stake as mandated by the Arizona Revised Statutes at 1-800-782-5348 before any construction begins to verify location of existing public utilities shown or not shown. Existing utility locations shown hereon are only approximate. It is the contractor’s responsibility to confirm horizontal and vertical location of all utilities without damaging same. Damaged utilities shall be repaired at no expense to the City.

- The contractor shall comply with all applicable Occupational Safety and Health Administration regulations.

- (If applicable) Floodplain Use Permit No._____, has been issued by Development Services Department for work impacting City and FEMA Floodplains.

PIA Guidelines:

- PIA Plans will be designed in accordance with COT Development Standards Sections 3 & 11, Chapter 25, Land Use Code, Pima County/City of Tucson Standard Details & Standard Specification for Public Improvements 2003 Edition, Transportation Access Management Guidelines for COT, Standards Manual for Drainage Design and Floodplain Management, Major Streets & Routes, Moratorium, ADOT Standard Details and ADA Standards.

- Lettering size for Paving Improvement plans is equal to or greater than 1/8 inch in height (12 point).

- Plan Symbols and Abbreviations will be accepted only as per the PC/COT Standard Details for Public Improvement 2003 Edition.

- Follow the City of Tucson, Engineering Division Active Practice Guidelines for Drafting Standards for the preparation of Project Plans, Office Procedure No. 8-1552-002.

- Plans shall contain all the information necessary to build project as a "stand alone" project and not rely on references to other plans or plats for necessary construction or inspection information. The plans shall show what is being built in the right-of-way, other details about private property/on-site construction should be on the grading plans that are reviewed and approved by Development Services Development/Floodplain Review.

- Engineer of Record must provide written documentation that all utilities within the right of way have been cleared for construction.

- All Rezoning requirements for ROW must be met.

- Phasing of paving plans (subdivisions) must correlate with approved tentative plat.

- Indicate all recordation information such as easements, dedications, right-of-way. Existing pedestrian and utility easements should be shown on plan view with labels as to being public or private with docket/page or plat book/page.

- Require a road profile to include Left, Center, Right, and the EOP of striped paved roadways. A road profile is needed for pavement widening projects (Deceleration/Acceleration lanes).

- Any proposed stormdrain in right-of-way must be **RCP** (Reinforced Concrete Pipe).

- Minimum size and type of storm drainpipe allowed within right-of-way is **18 inch RCP** (Reinforced Concrete Pipe).

- Minimum height of a box culvert is 4 foot.

- Con-Arch drainage structures are not allowed in the right-of-way.

- Public drainageways have to be shown in their entirety on the plans. Private drainage easements, detention/retention, channels can be shown but should be labeled private and NOT PART OF P.I.A. Drainage access ramps must be provided for Public Drainageways. Ramp with a minimum 12-foot width at no more than 15% slope.

- A minimum of 1-foot (2 foot Preferred) buffer must be provided between top of slope and sidewalk (natural slopes). Slopes greater than 4:1 and deeper that 2 foot requires barricade railing.

- Hinge point of slope/basin must have a minimum of 2 foot from right-of-way. (Slope on private side). *D.S. 11-09.3*

- Pedestrian areas/shoulders along side of strip paved streets should be a minimum of 8 feet wide, slope @ 2% and be separate to drainage ditches/channels.

- 10-yr storm water flows must be conveyed under the sidewalk and Storm flows over the 10-yr overtopping the sidewalk scupper must meet: DV^2 <18.

- Scuppers are required instead of depressed sidewalks and curb to create continuous sidewalk pedestrian circulation system.

- Scuppers with a height greater than 12 inches must have barricade railing (street side, back side always provided).

- Barricade railing, along sidewalk scuppers, must be anchored in the piers of the scupper.

- Concrete headers are required along asphalt radius returns when residential streets intersect with arterial and collectors streets without curbs.

- Curb access ramps on a continuous roadway/sidewalk shall have a minimum of 300 feet distance between ramps. Ramps opposite of one another shall line up. All curb access ramps should have the 6-inch curb at back of ramp.

- Thickened pavement edge is required if concrete curb or header is not being installed. Minimum width of installed pavement has to be 2 feet in order to install thickened edge. Usually, this comes at the end of pavement tapers where they match back to the existing pavement edge.

- Existing pavement thickness and surface treatment shall be matched.

- When numerous pavement cuts are performed or where extensive pavement areas are disturbed in existing roadways additional surface treatments will be required.

- No private utilities, irrigation or backflow preventors are allowed in right-of-way.

- Apply all conditions/requirements as related to Pavement Cut Moratorium, Major Streets & Routes – (arterial & collector) future, widening, tapering and turn lanes.

- Vertical curves are required on all streets where the algebraic difference in grade exceeds one (1) percent, and the minimum desirable vertical curve length is one hundred (100) feet.

- Projects adjoining other jurisdictions must have approved improvements.

- Any proposed Improvements in ADOT ROW needs to be approved by ADOT.
    - ◊ Ajo Way: From I-19 west to City Limits (La Cholla)
    - ◊ Miracle Mile: From I-10 east to Oracle Rd.
    - ◊ Oracle Rd.: Miracle Mile north to city limits (Just north of River Rd.)

Detail sheet:

- Curve and line data must be provided in table format.

- Differing structural pavement sections on plan shall be specific to each street affected. Include a dimensioned pavement structural section for each. Indicate Mix # / Effective air voids (Per SSPI), 5.5% MSR, 4.0% Local.

- A dimensioned detail for each type of curb access ramp to be built as part of the project must be shown. Truncated Domes required.

- A dimensioned detail for each type of drainage structure in the right-of-way to be built as part of the project must be shown.

- A dimensioned detail for each type of sidewalk structure to be built as part of the project must be shown.

Links:

- DOT/Permits & Codes Unit http://dot.tucsonaz.gov/engineering/permits.cfm
- DOT PIA Policy/Procedure http://intradot.dot.ci.tucson.az.us/HR/policies/pdfs/TDOT%206.30%20Private%20Improvement%20Agreements.pdf
- PIA Map http://tdotmaps.transview.org/mapguide_mwf_PermitsCodes.htm
- Maps & Records Section http://tdotmaps.transview.org/mandr/
- Chapter 25 http://www.municode.com/Resources/gateway.asp?pid=11294&sid=3
- PC/COT Standard Details http://www.dot.pima.gov/transeng/stdspecsdet/
- PC/COT Standard Specification http://www.dot.pima.gov/transeng/stdspecsdet/
- COT Development Standards PIA Fees – D.S. 1-05.6.0 http://www.tucsonaz.gov/dsd/DevStandsTOC.pdf
- DSD PIA application http://www.tucsonaz.gov/dsd/Forms_Fees___Maps/Applications/PIA_Application.pdf
- DSD submittal requirement http://www.tucsonaz.gov/dsd/Forms_Fees___Maps/Applications/PIA_Submittal_Requirement_Checklist.pdf
- TDOT Moratorium http://transview.org/dot/moratorium/
- TDOT Construction Updates http://dot.tucsonaz.gov/construction/
- Traffic Engineering (TAMG) http://dot.tucsonaz.gov/traffic/pdfs/Transportation%20Access%20Management%20Guidelines.pdf OR http://dot.tucsonaz.gov/traffic/
- Tucson Traffic Control Devices http://www.dot.ci.tucson.az.us/traffic/pdfs/City%20Additions%209-1-05.pdf

==========

PREPARED BY: Maps & Records Section **EFFECTIVE**: *2/2000*

APPROVED BY: *Dewayne Tripp, & MDH* **DATE:** *2/3/000*

==========

SUBJECT: Drafting Standards for the preparation of Project Plans.

PURPOSE: The purpose of this procedure is to establish and promote uniform guidelines and details which are to be used in the preparation of engineering plans for the City of Tucson, Engineering Division.

GENERAL: The outlined procedure shall be used in conjunction with all other City of Tucson Standard Specifications and Details. The standards shall apply to all plans being prepared by the Engineering Division, Consultants preparing plans for the Engineering Division and Consultants preparing plans for private entities that require submittal to and approval by the City of Tucson. If plans are to be submitted to the Arizona Department of Transportation, ADOT standards and details will have precedence over City of Tucson standards and details.

TYPES OF PLANS:

1. Improvement District Project Plans

Plans for improvement districts are ordered by the Mayor and Council. Benefiting property owners within each improvement district pay for a portion of the cost of the improvement in their area. For this reason, assessment diagram plans along with the construction plans are required for the determination of the individual property owner charges.

2. Bond and non-bond Plans

These plans are usually improvements in which costs are borne by the City. The preparation of plans shall be accomplished in the same manner as improvement district plans without the necessity of an assessment diagram.

3. Arizona Department of Transportation and Federally funded project plans

These plans are for construction of arterial streets within the City of Tucson, which are designated to receive Federal aid. The City of Tucson shares in the project cost. Plans for these projects shall be drawn in accordance with first, the City of Tucson standards; and second the Arizona Department of Transportation standards - in that order of precedence. FHWA and ADOT Trac project numbers need to be shown on the plans.

If a share of the cost is to be assessed to properly owners, an assessment diagram will be required.

4. Private Improvement Agreement Project Plans

These plans are drawn by consultant engineers for private developers / individuals or other concerns. If the work to be performed is within the public right-or-way, a City easement, or is so designed that drainage through or across private property affects the drainage in a public right-of-way or easement, plans for work on the right-of-way must be approved by the City Engineer and should conform to the City of Tucson standards and details as outlined in this procedure.

TYPES OF SHEETS:

1. Cover Sheet

This is to be the first sheet or sheets of a set of plans. This sheet(s) shall be 24"x36"as shown on page 6, and a title block as shown on page 7. The cover sheet will show the locations and the extent of the work to be performed and is to be drawn to the scale of 1"=100'. The cover sheet shall also show the name of the job, subdivision name, map and plat book and page, development number (if applicable), job number, plan number, sheet index, typical sections (may need additional sheets), legend for symbols, general notes and a location map at a scale of 3”= 1 mile in the upper right hand corner. Starting with the cover sheet all sheets will have a sequential page number located on the lower right hand corner (no letters).

2. Plan and Profile Sheets

A. Each sheet shall be 24"x 36" in size (see page 6) and contain borders, profile grid across the bottom portion and a title block in the lower right hand corner, see page 7. The stationing in the profile shall line up appropriately with the stationing in the plan view above. Plan/profile sheets shall not utilize aerial photographs unless approved by the City Engineers office.

B. The plan/profile scale shall be 1"= 40" horizontal and 1"= 4’ vertical unless directed otherwise by the City Engineers office. The profile grid shall contain a Plate “A” type pattern.

C. The alignment and profile of an improvement shall be produced from Existing Maps and Data. Information shall be gathered from Maps & Plats, Record of Surveys, New Survey Data, Existing Survey Field Books, Docket and Page information and other necessary sources to show the area to be improved.

D. The plan/profile shall show existing topography, culture, existing right-of-way, new right-of-way, survey control lines, existing curbs, new curbs, parcel, lot, block, subdivision name, dimensions, stationing, notes, all existing utility systems and new systems.

E. The profile portion shall show existing grades at both right-of-way lines and centerline alignment. The new grades shall be shown at centerline and both top of curb and gutter, or at edge of pavement if no curb is to be constructed. All three control lines will show elevations, stationing, percent of grade and all necessary related profiles pertaining to existing sanitary sewers, storm sewers, utilities and house floor elevations.

2. Detail Sheets

All details of manholes, drainage pipes, catch basins, other structures, and cross-sections, which are required to complete a working set of drawings shall be shown on detail sheets. These sheets shall be the same size as the plan/ profile sheets. The suggested minimum scale for sections should be 1/4" = 1'. Details of reinforced concrete should be at a scale of 3/8" = 1' or larger. The scale for most details will depend on the judgment of the designer. Clarity and space for dimensions and notes should form the criteria for the proper scale.

3. Assessment Sheets

The size of assessment diagrams shall be 24"x 36" as shown on page 5. The scale of the assessment property outline shall be 1"= 100'. The positioning of the title, City Clerk's note, series number, legend, sheet number and other required information will vary according to the configuration of the property outline for each project. The City Clerk's signature is to be located to accommodate the City of Tucson pressed seal.

MYLAR: The plans, using black permanent ink, shall be produced on a high quality transparent Mylar similar or equal to K & E, 4 mil., double matte. The Mylar shall have a City of Tucson title block, and black borderlines, as shown on page 6 & 7. If the plans are to be produced electronically, Auto Cad, etc., then the mylars shall be produced by Silver Halide photographic or Xerographic process. A reference to photographic silver process is made under 11-481.B of the Arizona Revised Statutes. Xerographic production shall only be accomplished by using the Oce 9700/9800 machine or City Engineers office approved equal. No other type of Xerographic or plotting type of process will be accepted. The city may also request the consultant to provide an electronic DXF copy of the improvement plans. The mylars shall be produced on double matte, 4mil, reverse/mirror image. Upon request, the City will furnish a 3-1/2" disc containing the standard title block, borders and plan/profile. The registrant stamp can be electronic, per the Arizona State Board of Technical Registration Rules, R4-30-304, effective May 1, 1995. Each Mylar will be signed by the registrant, using black permanent ink, and therefore become the original document for final submittal. The City's designated staff will sign the mylars for approval. After completion of the improvements, "As Builts" will be performed on the mylars. The words "As Built" will be boldly placed on each sheet with a date and a note in the revision block. No erasing of the original document is allowed. Changes of stationing, grades, notes, etc. shall be lined out using black permanent ink and the new "As Built" information will be added using black permanent ink. Large areas of changes will be clouded out or whole pages can be "X" out with "As Built" pages following, using an "A, B, etc." page designation. At no time will pencil notes, lines, dimensions, etc.; be allowed on the Mylar.

LETTERING: In order to produce clear legible prints, which can be reproduced from microfilm/scanning, the lettering shall be no smaller than 1/8" in height or 0.125".

LINE WORK: The line weight shall conform to the City/County Standard Detail Manual for Public Improvement.

Lightweight lines shall be used for all dimension lines and lines from descriptive notes to objects. They shall be continuous unbroken lines. The work shall be spaced so that these lines do not pass through other notes or details.

Arrows must be small and neat. They shall be placed in such a manner that there can be no question as to the line or object to which they refer.

In order to produce clear legible prints which can be reproduced from microfilm/scanning, no size smaller than 00 pen or Auto Cad equivalent .012 inch shall be used.

Stick-on materials to delineate new or existing improvements, notes, etc. will not be allowed unless approved by the City Engineer.

Areas of new pavement shall be lightly shaded, using a red pencil, on the backside of the Mylar. Shading along the new curb or edge of pavement will be adequate. The shading shall not be placed over utility lines, dimensions, etc. that may obscure the information.

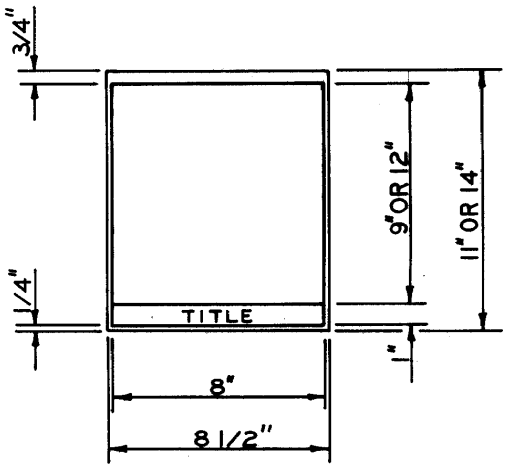
Screening of existing conditions to emphasize new improvements will not be allowed unless approved by the City Engineers office. Screening is not feasible for reasons of microfilming or scanning of the final "As Built" plans.

NORTH ARROW: Use the standard north arrow, as shown on page 8 on all maps, drawings and assessments diagrams. Direction of north arrow will be determined by stationing. All stationing will read from left to right.

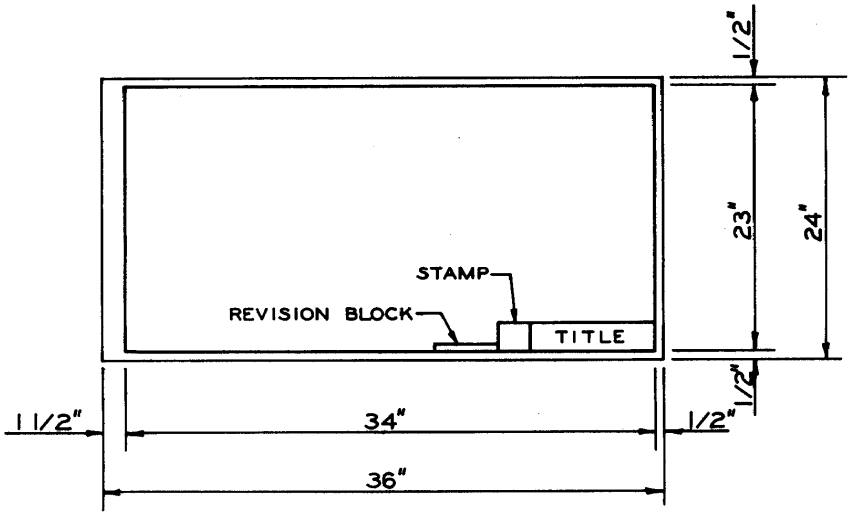
STATIONING: All stationing on plan and profile sheets should increase as you read from Left to right. To accomplish this, (see NORTH ARROW) the survey should have increasing stationing from west to east or increasing stationing from north to south.

Note: If a survey is inadvertently run with increasing stationing in the wrong direction (say from south to north), the draftsman should lay out his sheet so that the stationing reads from left to right, regardless of which way the north arrow points (in this case, the north arrow would point to the right).

SYMBOLS AND ABBREVIATIONS: Engineering Plans shall conform to the Standards found in the "City/County Standard" Detail Manual for Public Improvement, 1994 Edition.

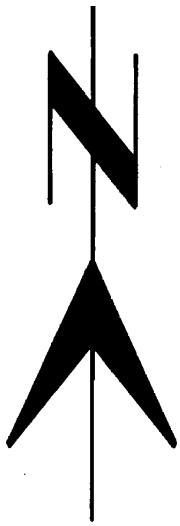


MISCELLANEOUS MAPS
AND DRAWINGS



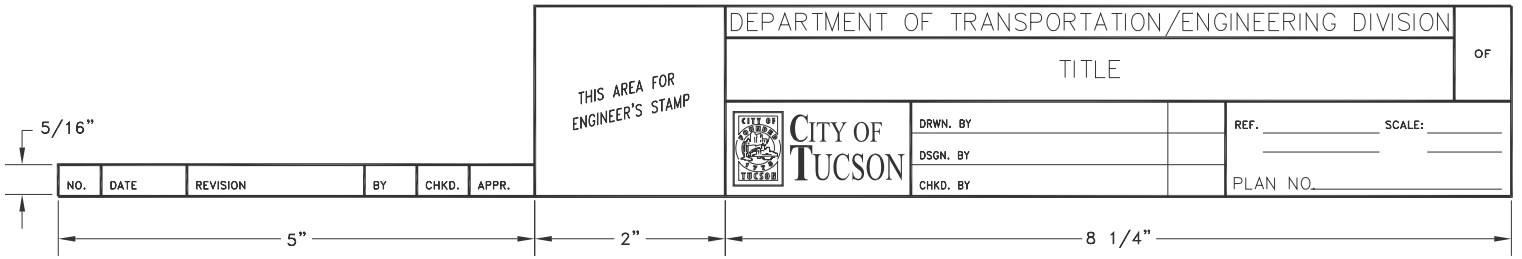
COVER SHEETS, PLAN, PLAN PROFILE
AND ASSESSMENT DIAGRAMS

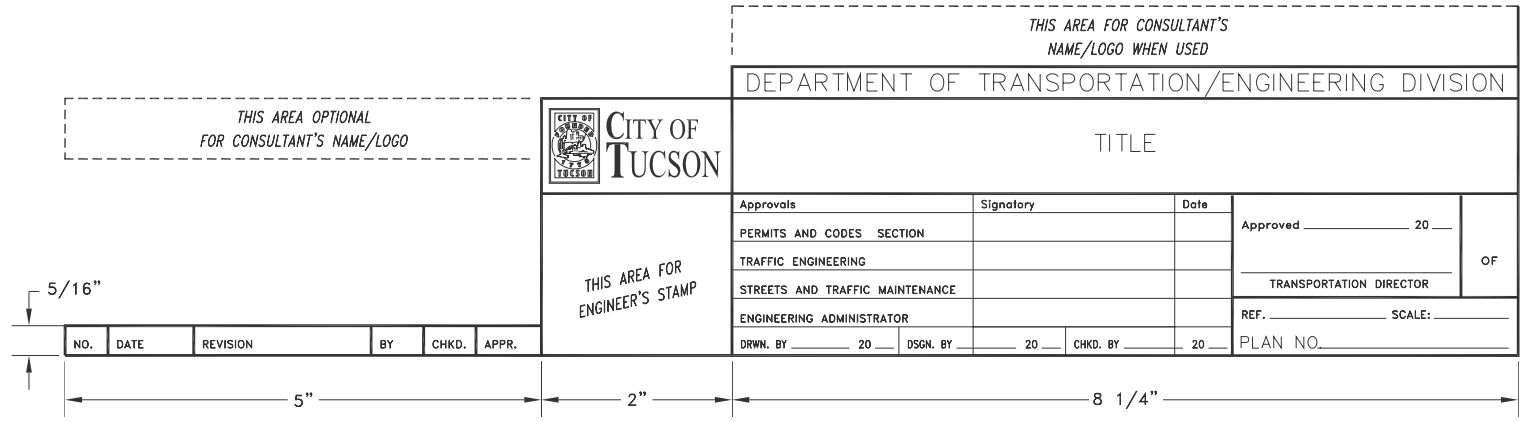
STANDARD DRAWING SIZES



COVER SHEETS, PLAN, PLAN PROFILE
AND ASSESSMENT DIAGRAMS

FOR 8 1/2"X 11" OR 8 1/2"X 14"
MISCELLANEOUS MAPS AND DRAWINGS


5/16"
NO.
DATE
REVISION
BY
CHKD.
APPR.
THIS AREA FOR ENGINEER'S STAMP
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
TITLE
OF
CITY OF TUCSON
DRWN. BY
DSGN. BY
CHKD. BY
REF.
SCALE:
PLAN NO.
5"
2"
8 1/4"


THIS AREA FOR CONSULTANT'S NAME/LOGO WHEN USED
THIS AREA OPTIONAL FOR CONSULTANT'S NAME/LOGO
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION
CITY OF TUCSON
TITLE
Approvals
Signatory
Date
PERMITS AND CODES SECTION
TRAFFIC ENGINEERING
STREETS AND TRAFFIC MAINTENANCE
ENGINEERING ADMINISTRATOR
Approved 20
TRANSPORTATION DIRECTOR
OF
5/16"
NO.
DATE
REVISION
BY
CHKD.
APPR.
THIS AREA FOR ENGINEER'S STAMP
DRWN. BY 20
DSGN. BY 20
CHKD. BY 20
REF.
SCALE:
PLAN NO.
5"
2"
8 1/4"